South Carolina's Epidemiologic Profile of HIV/AIDS

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South Carolina HIV Prevention Community Planning Group
and
South Carolina Department of Health and Environmental Control, STD/HIV Division

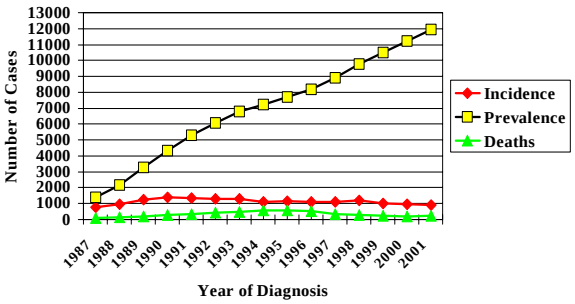
Executive Summary

Since 1981, more than 17,600 persons have been diagnosed with HIV infection (including AIDS) in South Carolina through December 2001. During 1985 – 1990, an average of 848 cases were diagnosed each year. In the subsequent three years (1991 – 1993), newly diagnosed HIV/AIDS cases averaged 1,310. The increase during this period was in part due to the artificial rise in AIDS cases due to the change in case definition in 1993. For the past five years, the annual number of new cases has been about 1000. Many more persons are infected but have not been tested.

Some of the changes over time in numbers of new cases are largely the result of reporting patterns or targeted testing initiatives. The initial steep rise in the epidemic reflects the early years when less was known about the transmission of HIV and effective medical treatments did not exist. As a result, infection rates increased and more HIV-infected individuals went on to develop full-blown AIDS. Most experts believe that when more was learned about HIV and the behaviors involved in its spread, effective prevention strategies reduced the overall number of new infections, and medical treatment, for some individuals, postponed the onset of full-blown AIDS. In more recent years, however, there is concern nationally that the epidemic may grow particularly among young men who have sex with men.

Since 1994, new anti-retroviral drugs and strengthened care services have contributed to a decline in overall AIDS deaths. This decline is illustrated by the 228 deaths in 2001, a 56% drop from the 521 deaths in 1994. It is important to note that despite the decline in deaths due to AIDS and the apparent stabilization of the number of new HIV/AIDS cases diagnosed annually, the prevalence of HIV infection (the number of persons estimated to be living with HIV/AIDS) is significantly increasing. The number of persons living with HIV/AIDS at the end of each year has increased 178% from 1990 to 2001. It is also important to note that there are differences among certain populations in the number and rate of new and prevalent infections, as this profile will indicate. Figure 1 shows total incidence (the number of new cases within a specified time period), deaths and prevalence of HIV/AIDS cases in South Carolina since 1987.

"Figure 1. South Carolina HIV/AIDS Incidence, Prevalence and Deaths



Number of Cases Diagnosed in SC only; excludes out of state cases returning to SC.

The epidemic in South Carolina is primarily driven by sexual exposure, primarily among men who have sex with men and heterosexuals at risk. Injecting drug use appears to be diminishing as a risk for HIV.

African Americans are disproportionately affected by HIV/AIDS and are over-represented among all risk populations.

Overview of Chapter

The purpose of this Epidemiologic Profile is to provide information to the SC HIV Prevention Community Planning Group (CPG) on the number and characteristics of persons becoming HIV infected in order to target and prioritize HIV prevention activities.

This chapter of the SC HIV Prevention Plan includes a list of definitions and describes the data sources used, the limitations of each data type, and presents the data in order to answer the following questions:

1. What are the socio-demographic characteristics of the population?

2. What is the impact of HIV/AIDS on the population?

3. Who is at risk for becoming infected with HIV?

4. What is the geographic distribution of HIV infection?*

These questions will be explored through analyses of cumulative living (prevalent) and newly diagnosed (incident) HIV/AIDS cases; a description of seroprevalence data from HIV counseling and testing sites and other studies; a summary of other risk behavior profiles and community-based HIV risk assessment information; and a discussion of related sociodemographic, health and risk behavior indicators.

*Note: geographic distribution will be discussed within questions 2 and 3 for each population/risk described.

Definitions

AIDS - Acquired Immunodeficiency Syndrome, the end stage of HIV infection characterized by life-threatening or severely disabling disease.

HIV - Human Immunodeficiency Virus, the cause of HIV infection.

HIV/AIDS - Includes those persons with HIV infection, as well as those who have progressed to AIDS. Unless noted, most HIV data in this profile includes persons diagnosed with AIDS.

HIV Only- Includes only persons with HIV infection who did not develop AIDS within 365 days of report of positive HIV test.

Incidence- The number of new HIV/AIDS cases newly diagnosed and reported each year. Incidence cases may be combined in two or three year periods.

Incidence Rate - Number of new cases occurring during a period of time, divided by the annual average population, multiplied by 100,000. It is a measure of the frequency with which an event (e.g. new HIV/AIDS cases) occurs in a population over a period of

time. It is also a measure of risk of getting the disease.

Prevalence- The number or proportion of persons estimated to be living with HIV/AIDS at the end of a particular period of time (e.g. year).

Prevalence Rate - Total number of living HIV/AIDS cases (both old and new cases) during the year of report, divided by the annual average population multiplied by 100,000. It is the proportion of persons in a population who have a particular disease or attribute at a specified point in time (or specified period of time).

Rates are used to:

- measure the frequency of disease (in this case, HIV/AIDS) or other outcomes of interest,
- describe the distribution of disease occurrence in human populations,
- allow comparison of the risk of disease or burden of disease across populations,
- characterize the risk of disease for a population, and
- identify determinants of disease.

They may also be used to help:

- prioritize prevention programs among competing causes,
- identify target groups for intervention,
- acquire funding for resources, and
- compare events across geopolitical boundaries.

TYPES AND QUALITY OF DATA

Because no one epidemiologic data set will provide a complete picture of HIV/AIDS in the community, or the state for that matter, we have assembled data from several categories and sources. Data from a variety of categories provide a more accurate picture of past, present and future HIV/AIDS infection trends. Keeping in mind that not all data are equal, data sources must be considered in the context of their objectives, strengths and limitations; who the target populations are; how the data were collected; and the validity of the data.

As described above, several data sets are used to illustrate the South Carolina populations diagnosed with HIV/AIDS and to characterize the nature of risk-taking. All of these data sets share limitations or have similar types of bias introduced, in that most are reported by third parties, largely providers, who must seek information from the affected individual as to illness, transmission mode, and demographic characteristics. These reports are limited both by the willingness of providers to ask about

these factors and that of clients to report on personal behaviors. These data are also limited in their ability to broadly characterize populations. For instance, STD (sexually transmitted disease) or HIV/AIDS case report data can only characterize persons with STD or HIV who seek treatment, or data on estimated condom use among women can not characterize all women but only those who agree to participate in selected behavioral surveys. Individuals who seek treatment for STD (and who are offered HIV testing) may be very different from those individuals who do not. However, each of the data sets referred to in this profile provide information to describe the relative risk and impact of this disease on the people of South Carolina.

The following summarizes data sources, and limitations, used by the data-working group to complete the South Carolina Epidemiologic Profile of HIV/AIDS.

Selected Data Source Description and Limitations:

Department of Alcohol and Other Drug Abuse Services (DAODAS) SC Treatment Needs Assessment: Household Telephone Survey Data

The purpose of the survey was to collect data on the prevalence of use of alcohol, marijuana, hallucinogens, cocaine, and heroin; to identify treatment needs related to use of these substances; and to determine the background characteristics associated with different patterns of use. The state was stratified into four regions and within each stratum a random sample of telephone numbers were selected using random digit dialing (RDD). The questionnaire was based largely on the National Technical Center's Telephone Substance Dependence Needs Assessment Questionnaire, which is "designed to be the centerpiece of a needs assessment of treatment services that state or territories may conduct as part of their substance abuse planning activities. Interviews were conducted by trained staff. A total of 10,324 interviews were completed as part of the study by residents 18 years of age and older.

Advantages to conducting a telephone survey compared to face-to-face interviews are as follows: 1) it costs three times less; 2) able to collect data from a significantly large number of individuals, resulting in smaller standard errors for the overall estimates of use of various substances and a larger number of individuals with rare characteristics.

Limitations include: population coverage–collecting data by telephone limits the potential respondents to those living in households and excludes individuals, such as the homeless, those in correctional facilities, and those in treatment facilities who may be more likely to experience problems with alcohol and other drugs. Moreover, according to 1990 census data, 7.9% of households in South Carolina do not have telephones and, consequently, had no chance of being included in the study. Secondly, underreporting–in general, respondents' concerns over confidentiality produce underestimates of reports of sensitive behaviors such as those considered in this study. Despite these limitations, telephone surveys can provide

comparatively reliable estimates of substance use and characteristics associated with such use and they have been regarded as an effective means for collecting such data from the general population.

HIV Counseling and Testing Program Data from SC-DHEC Clinics

Counseling and testing data, while highly informative about persons who seek counseling and testing, does not tell us anything about people who do not seek testing or choose not to test. All states provide HIV counseling and testing services and maintain data to quantify HIV counseling and testing services delivered in publicly-funded sites and to determine the characteristics of persons receiving those services. These data are used by prevention programs to plan and target services for high-risk individuals. The type of data collected in South Carolina include the counseling and testing site type, number of clients tested and number positive for each risk group, number tested, number positive by type of test site, and number tested and number positive by race/ethnicity gender, and age group. Clients receive confidential counseling and testing in each of the 46 county health department clinics.
Note: in 2001 counseling and testing was also provided by community organizations but data from these sites were not available for this report.

The counseling and testing data system is standardized and has been in place for several years. Data in this Epi-Profile reflect number of individual clients tested during a specific period of time. Persons who received multiple tests during the report period are only counted once. It includes persons tested in family clinics, maternity clinics, TB, STD clinics and persons voluntarily requesting services or referred through partner counseling services. Approximately one third of the total of newly diagnosed and reported persons with HIV infection each year are from SC-DHEC counseling and testing sites. Persons tested in other settings, such as physician offices, hospitals, state facilities, etc. are not included in the DHEC counseling and testing database.

To determine a client's level of risk, each person is assigned a risk status (e.g. injecting drug use, male to male sex, heterosexual with known risk). Since most clients acknowledge multiple risks, risk status is determined by using the CDC's hierarchy of risk. This process assigns the client's "highest" risk. The highest possible risk in the hierarchy is sex with a person with HIV/AIDS, while the least significant risk is "no acknowledged risk". A person is only represented in their highest risk category regardless of how many risks the client acknowledges. This CDC risk hierarchy can limit interpretability of data; it also does not reflect associated risks such as other non-injecting substance use, i.e. crack-cocaine.

Counseling and testing data in South Carolina and nationally is distinct from blinded, HIV seroprevalence surveys which generate an estimate of HIV seroprevalence that is unbiased by client self-selection. The DHEC counseling and testing system only includes clients who seek out counseling and testing services or

agree to be tested after consultation with a counselor at a clinic site. However, for those clinic sites in which clients can obtain services other than counseling and testing for HIV, and in which all or nearly all clients actually receive HIV testing, (for example, maternity and STD clinics), data for those sites approximates the reliability of the blinded surveys. For example, the annual percentage of HIV positive tests is consistently 0.1% in DHEC maternity clinics where an estimated 80-90% of clients receive HIV testing. This rate is very similar to the blinded childbearing women seroprevalence survey rate of 0.19%, which tests a representative sample of all live births in the state.

Job Corps HIV Screening Data

The Job Corps, a residential occupational training program for adolescents and young adults between the ages of 16 and 24, screens applicants for HIV infection. Data from this program can be used to assess the prevalence and trends of HIV infection among disadvantage youth in the United States. This is the only national HIV screening program for adolescents and young adults who are not excluded based on sexual orientation or history of drug use. With specific limitations, results can be generalized to populations with similar sociodemographic and socioeconomic characteristics.

Limitation: Adolescents and young adults who continue to use injecting drugs, who are incarcerated, or who are involved in prostitution or other illegal activities are excluded from the Job Corps. As a result of this exclusion, Job Corps HIV screening may underestimate the prevalence of HIV infection among youth at highest risk. Also, it is likely that drug-using applicants or applicants who know or suspect that they are HIV positive may terminate their application prior to medical screening, again, leading to under-representation of individuals most at risk for HIV.

Military HIV Screening Data

Since October of 1985, all persons applying for active duty or reserve military service, the service academies, and the Reserve Officer Training Corps (ROTC) have been screened for HIV infection as part of their entrance medical evaluation. Before referral for medical evaluation, military applicants are interviewed by recruiting officials about, but not limited to, drug use, which is grounds for exclusion. CDC receives statistical data on a quarterly basis from the Department of Defense in order to describe trends in HIV prevalence among applicants. Given the size of the population tested, new or emerging HIV infection trends may be reflected by an increase in seroprevalence rates among applicants for military service.

Limitation: As illicit drug use has been grounds for exclusion from military service, seroprevalence rates among applicants for military service may underestimate the actual seroprevalence in the general population.

SC-DHEC, HIV/AIDS Reporting Surveillance System (HARSS)

All health care providers, hospitals, and laboratories in South Carolina are required to report persons diagnosed with confirmed HIV infection and/or

AIDS. Each year approximately one-third of new cases are reported from county health departments, one-third from hospitals, one-fifth from physicians, and the remainder from state/federal facilities (including prisons) and laboratories. HARS monitors the incidence and demographic profile of HIV/AIDS; describes the modes of HIV transmission among persons with HIV/AIDS; guides the development and implementation of public health intervention and prevention programs; and assists in evaluating the efficacy of public health interventions. It is the principal source of knowledge regarding trends in the number and characteristics of HIV-infected persons. It includes persons in all age, gender, race/ethnic, and mode-of-HIV-exposure groups; and it provides a historical perspective in trends dating to the earliest recognition of the AIDS epidemic.

This profile primarily presents data on the total infection/disease spectrum: HIV infection including AIDS (not AIDS alone). Because of the long and variable period from HIV infection to the development of AIDS, trends in AIDS cases data do not represent recent HIV infections or all HIV-infected persons. AIDS surveillance data do not represent persons whose HIV infection is not recognized or diagnosed. AIDS cases have declined nationwide; however, because AIDS surveillance trends are affected by the incidence of HIV infection, as well as the effect of treatment on the progression of HIV disease, future AIDS trends cannot be predicted.

Because trends in new diagnoses of HIV infection are affected when in the course of disease a person seeks or is offered HIV testing, such trends do not reflect the total incidence of HIV infection in the population. In addition, because all HIV-infected persons in the population might not have had the infection diagnosed, these data do not represent total HIV prevalence in the population. Interpretation of these data is complicated by several factors, ranging from a person having both HIV then AIDS diagnoses in the same year, varying time between reporting HIV and AIDS cases, and numerous reasons why the number of new HIV diagnoses changed (increased, decreased, or stable).

Some data is provided on HIV infection-only (persons reported with HIV infection who do not have an AIDS diagnosis within 365 days of being diagnosed with HIV). This data, while highly dependent on persons seeking or receiving HIV testing early in their infection stages, provide an opportunity to compare persons presumably infected more recently with those infected as long as ten or so years ago (AIDS diagnosis).

Risk categories are assigned similar to the methods described above in HIV Counseling and Testing. There are some slight differences in the type of categories between HIV/AIDS surveillance reports and HIV Counseling and Testing reports. In South Carolina, about 33% of adult/adolescent HIV infection/AIDS cases reported in 1998 did not have risk categories reported. These cases are defined as “No Identified Risk”-NIR). The proportion of NIR cases has been increasing nationally as well. The primary reason for incomplete risk information (NIRs) is that reports from

laboratories do not include risk, and an increasing proportion of cases result from heterosexual transmission but are not able to be defined in CDC's definition of heterosexual transmission. For example, persons who report having multiple heterosexual partners or who have sex for money/drugs but the status of their partners is not known, are not classified as "heterosexual", they are "No Identified Risk". South Carolina has received funding from CDC to conduct a special project to collect and define indicators of behavioral risk, particularly to define high-risk heterosexual behaviors. Indicators include multiple heterosexual and same sex partners, drug use, evidence of blood transfusion or hepatitis, history of sexually transmitted disease, or exchange of money or drugs for sex. This project will provide more useful risk information for prevention planning in the future.

SC-DHEC, Sexually Transmitted Diseases Management Information System (STD*MIS)

Health care providers and laboratories are required by law to report certain sexually transmitted diseases (including syphilis, chlamydia, gonorrhea, chancroid, hepatitis) to SC-DHEC. A sexually transmitted disease, other than HIV infection, represents a visible and immediate health problem that stems from unprotected intercourse with an infected partner. Research from several studies strongly indicates that STDs increase the possibility of acquiring and transmitting HIV infection. The emerging problem of heterosexual HIV transmission in the South closely parallels that of syphilis and gonorrhea. Gonorrhea, syphilis, and chlamydia incidence and prevalence data are used by programs to: 1) monitor local, and state trends; 2) identify high-risk groups and geographic areas in which unsafe sexual behaviors occur, 3) guide the development and implementation of public health intervention and prevention programs; and 4) assist in evaluating the efficacy of public health interventions.

Considering the short incubation periods for these infections, gonorrhea, syphilis, and chlamydia incidence represent recent consequences of unsafe sexual behavior and point to populations who are potentially at very high risk for acquiring and transmitting HIV infection. Unfortunately, an often unrecognized aspect of STDs, including bacterial STDs, is how frequently persons with these infections have no symptoms or do not recognize symptoms. Most studies of STDs are conducted in health-care settings specifically for persons who do recognize symptoms; therefore, these studies usually overestimate the proportion of infected persons who are symptomatic. Studies of STD screening in nonhealth-care settings (e.g., jails, workplaces, and communities) or health-care settings where STD treatment is not the primary function (e.g., family-planning clinics) suggest that most persons with gonorrhea or chlamydia are asymptomatic.

Limitations: STD data lack much information that would help to better understand HIV risk, such as mode of transmission. Also, bias is introduced for some diseases, such as

chlamydia, where screening of asymptomatic persons is done much more frequently in women than in men. For example, all women <25 years attending family planning and STD clinics in county health departments are routinely screened for chlamydia and gonorrhea. Also, there may be bias in that the majority of reports are from public clinics; the personal nature of STD's may affect providers' willingness to report. This may account, in part, for the disparity of some STDs to occur at much higher rates among African Americans who are more likely to seek care in public clinics, where there is more complete reporting.

South Carolina Statistical Abstract, 1998 and 2000

An annual publication of the South Carolina State Budget and Control Board, Office of Research and Statistics. This state document provides a comprehensive, single-source reference of demographic and economical data pertinent to South Carolina. Statistics providing information on factors impacting the state's social and economical development are compiled from in-house data bases as well as a variety of federal, state, local, and private sources. In order to complete the epidemiologic profile, sociodemographic data from sections State and County Rankings, Education, Employment, Housing, Income, and Population were used. The abstract depends heavily on the US Bureau of the Census data from 2000. As a result of this, data may not represent the current situation in South Carolina.

South Carolina Vital and Morbidity Statistics, 2000

Its purpose is to provide basic reference data for a variety of users. The primary uses of the report were to enumerate and characterize mortality attributed to HIV infection. The data were also used to compare trends in HIV infection mortality with other leading causes of death and to characterize the impact of HIV infection on mortality. Data on causes of death are based on information recorded by hospitals, physicians, coroners, midwives and funeral directors. Recorded information may be inaccurate or incomplete due to underreporting of certain causes of deaths, the number of HIV-related deaths and the conditions may be underestimated. Vital statistics data are not as timely as AIDS case reports due in part to processing time.

Youth Risk Behavior Surveillance System (YRBSS)

The Youth Risk Behavior Survey (YRBS) was developed cooperatively by the Centers for Disease Control and Prevention (CDC), several federal agencies and state departments of education to measure the extent to which adolescents engage in health risk and health enhancing behaviors. The survey is a 99-item questionnaire administered to 9^{th}-12^{th} graders in the public school system. Samples are randomly selected based on school size (small, medium and large). Of the 99 items, 11 are on tobacco use, 5 on alcohol use, 4 on marijuana use, 9 on cocaine use, 8 on sexual behaviors for pregnancy, HIV/AIDS and other STD risk, 2 on HIV/AIDS Education, 1 on HIV/AIDS testing and 2 on HIV/AIDS risk perceptions. There are 380

private K-12 schools in South Carolina (SC Statistical Abstract, 1998). However, none of them are included in the survey. Youth who are in middle school are not included as well. Also, while schools are randomly selected for participation some may choose not to participate.

This survey relies heavily on surveillance methods and self-reports; so it really depends on how well respondents understand the question and how well they can accurately and honestly answer the question. However, the data are edited, checked and weighted. These data are representative of only public high school students in grades 9-12 in South Carolina.

Supplement to HIV/AIDS Surveillance (SHAS) Project

A population-based study developed by the Centers for Disease Control whose main focus is to obtain additional descriptive information on persons newly reported with HIV or AIDS. The questionnaire contains 118+-questions divided into five modules that investigates sexual and drug use behaviors, reproductive and child health, medical compliance, HIV testing and health and social services. It is administered by trained interviewers to HIV infected persons who are at least 18 years of age and live in the five counties of the state that are participating in the study—Charleston, Orangeburg, Bamberg, Calhoun, and Richland Counties. Prisoners are excluded.

SHAS data provide a picture of the epidemic by identifying recently practiced behaviors that may have led to infection, demonstrating current needs of HIV infected persons, and investigating minority health issues and reasons for noncompliance of antiretroviral therapy, information that is increasingly needed by health agencies. The SHAS survey includes six sections:

1) demographic/socioeconomic,
2) drug use,
3) sexual behavior/STD history,
4) reproductive history,
5) HIV testing and medical therapy, and
6) health and social services.

Limitations: This survey relies heavily on surveillance methods and self-reports; so it really depends on how well respondents understand the question and how well they can accurately and honestly answer the question. Although cumulative SHAS data closely reflects the HIV/AIDS epidemic with regard to race and sex, caution should be used in the interpretation and generalization of the data to the entire state. Due to the nature of the project, SHAS should not be used to track trends across time (project areas starting at different times and staffing turnover). Trends such as increased/decreased crack use in HIV infected patients from Charleston and none in Richland could be false if in fact no interviews were taken during that period in that particular area.

Question #1: What are the sociodemographic characteristics of the population?

The HIV epidemic in the United States, and in South Carolina, is a composite of multiple, unevenly distributed epidemics in different regions and among different populations. These populations may comprise persons who practice similar high-risk behavior, such as injecting drugs or having unprotected sex with an infected person. Although race and ethnicity are not risk factors for HIV transmission they are markers for complex underlying social, economic, and cultural factors that affect personal behavior and health. Low socioeconomic status is associated with increased disease morbidity and premature mortality. Unemployment status is correlated to limited access to health care services, resulting in increased risk for disease. This section provides background information on South Carolina's populations and contextual information, i.e. education, poverty level, housing, etc, for assessing potential HIV impact. The social, economic, and cultural context of HIV infection must be considered when funding, designing, implementing and evaluating HIV prevention programs for diverse populations.

THE STATE

South Carolina lies on the south eastern seaboard of the United states. Shaped like an inverted triangle, the state is bounded on the north by North Carolina, on the southeast by the Atlantic Ocean, and on the southwest by Georgia. It ranks 40th among the 50 states in size and has a geographic area of 30,111 square miles. South Carolina has a diverse geography that stretches from the Blue Ridge Mountains in the northwest corner to the beaches along the Atlantic coast in the southeast. There are 46 counties and they are divided into 13 public health districts. Columbia, located in the center of the state, is the capital and the largest city. There are 3 metropolitan areas with a population of 500,000 or more: Columbia, Charleston and Greenville areas. The state is crisscrossed by interstate highways that link it with every part of the country, including I-95 extending north-south across the center of the state from New York to Florida and I-26 from Asheville, North Carolina to Charleston, South Carolina, and I-20 that extends east-west across the state from Florence, South Carolina to Atlanta, Georgia. Manufacturing is the state's leading industry, followed by tourism and forestry.

POPULATIONS

In 2000, the total number of South Carolinians was 4,012,012. Of this total, 67% were Caucasian, 30% were African American, 0.3% was Native American, 0.9% was Asian and Pacific Islander, and 2.4% were of Hispanic origin. Fifty-one percent were female and forty-nine percent were male. Seventy-two percent of the population distribution in South Carolina is defined as metropolitan, 29% is non-metropolitan. The proportion of persons who have completed a bachelor's degree or more is 20.4, lower than the U.S. proportion of 24.4. (Figure 2)

Figure 2: Selected Demographic Information South Carolina and United States, 2000

Population (2000)	South Carolina 4,012,012	United States 281,421,906
Pop. Density (persons/square mi.)	133.2	79.6
Median Age	35.4	35.3
Racial/Ethnic Distribution of Pop.		
% White	67.2	75.1
% Black	29.5	12.3
% Asian/Pacific Islander	0.9	3.6
% Amer.Ind/Alaskan Nat.	0.3	0.9
% Hispanic	2.4	12.5
Educational Attainment (Age ≥25yrs)		
High school grad. +	76.3	80.4
Bachelor's degree +	20.4	24.4

Source: U.S. Bureau of the Census,2000

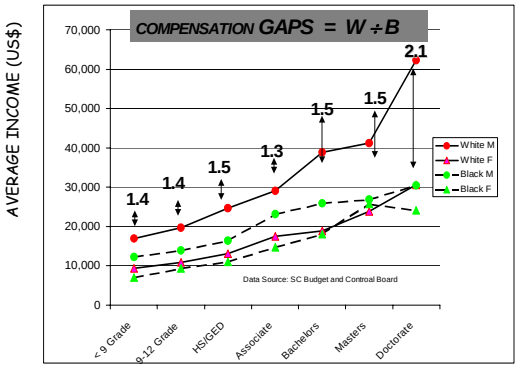
EDUCATION & EARNINGS

Despite the economic strides it has made in recent years, South Carolina remains among the states with the highest percentage of persons who live below the poverty level (15th of fifty states and District of Columbia). Educational attainment is strongly correlated with poverty, and South Carolina continues to rank low in percent of persons over 25 years of age who have bachelors' degrees or higher (36th of fifty states and District of Columbia). Nearly twenty percent (19.2%) of the population has less than a high school education.

Educational attainment and earnings are directly related. The more education a South Carolinian has, the more money he/she is likely to earn. However, if we compare across gender and racial lines, there are inconsistencies.

White males clearly attain the highest incomes. The income gap between whites and blacks is higher for each education level, but particularly increases for persons with bachelors degrees or more. Income for whites is 1.5 times greater than blacks for persons with bachelors and masters degrees, and is 2.1 times greater than blacks for persons with doctorates. (Figure 3)

Figure 3: Income by Educational Attainment by Race & Gender: SC, 1990



Compared to other races, Blacks earned the least per capita income, averaging 43% below the state's average. Whites earned 19% above the state's average per capita income. (Figure 4)

Figure 4: SC Per Capita Income in 1989 by Race and Hispanic Origin

	INCOME GAPS	*Rel to Blacks*
• For Whites	$14,115	**2.1**
• For Asian/Pacific Islanders	$11,391	**1.7**
• Of Hispanic Origin	$10,723	**1.6**
• For Native Americans	$10,288	**1.5**
• For Other Races	$10,187	**1.5**
• For Blacks	$ 6,800	**1.0**
• OVERALL	$11,897	**1.7**

Data Source: SC-Budget & Control Board, Office of Research & Statistics

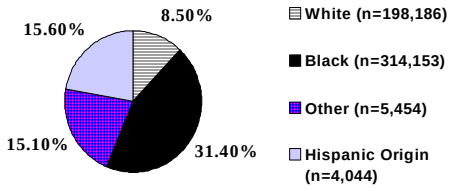
POVERTY LEVEL

Approximately 13.4% of South Carolinians lived below the poverty level in 2000 (ranking 17th in the US); and 10.7 % of South Carolinian families lived below the poverty level (ranking 12th in the US).

Thirty-one percent of Black South Carolinians were below poverty in 1989, compared to 16% of persons of

Hispanic descent, almost 9% among Whites and 15% of persons categorized as other, which includes Asian Pacific Islanders and Native Americans. (Figure 5)

Figure 5: Percent of Each Racial/Ethnic Pop Living Below Federal Poverty Level; SC, 1989



POVERTY GAPS

Data Source: SC-Budget & Control Board, Office of Research & Statistics

INSURANCE/ACCESS TO PRIMARY CARE

Fifteen percent (15%) of South Carolinians do not have health insurance coverage. A significantly higher proportion of persons in the state do not have access to a primary care provider (35.8%) compared to the total U.S. population (17.1%). (Figure 6) Over 95% of counties are designated all or part medically underserved areas and all or part health profession shortage areas (1999).

EMPLOYMENT

South Carolina's unemployment rate as of December 2002 was 6%, similar to the US rate. The median income in 2000 was $37,082 (ranked 39th) vs. the US median income of $41,994.

Figure 6: Selected Access Indicators, SC and US

	SC	US
Total Pop. Uninsured, 1999 - 2000	14%	14%
Below 200% Poverty Level, 1999 - 2000	36%	34%
Counties Designated All/Part Medically Underserved Areas, 1999	95.7%	80.5%
Without Access to Primary Care Provider, 1996	35.8	17.1
Women Receiving 1st Trimester Prenatal Care, 2000	79%	83%

Source: U.S. Dept. of Health and Human Services, HRSA

HOUSING

According to the US Census 2001 Supplemental Survey, 71% of the state's homes are owned. The SC Dept. of Commerce estimates that 12,410 persons may be homeless at some point in time.

SUMMARY

South Carolina, as many southern states, ranks high for poverty, low educational attainment, and uninsured population compared to other US states. These factors can affect one's ability to access prevention and health care services and adhere to regimens for treatment and care of diseases that may lead to more severe consequences.

Question #2: What is the impact of HIV/AIDS on the population?

In the United States, HIV/AIDS remains a significant cause of illness, disability, and death, despite declines in new AIDS cases and deaths from 1995 to 2001. Current surveillance provides population-based HIV/AIDS data for tracking trends in the epidemic, targeting and allocating resources for prevention and treatment services, and planning and conducting program evaluation activities.

In South Carolina, AIDS cases have been reported since 1981, and confirmed cases of HIV infection have been reportable since February 1986. During the calendar year of 2001, according to the CDC HIV/AIDS Surveillance Report, South Carolina ranked 9th among states and the District of Columbia with an AIDS case rate of 19.6 per 100,000 population. During this same time, South Carolina ranked eighth among states and the District of Columbia with an AIDS case rate of 13.1 per 100,000 for female adolescent/adult AIDS cases. The epidemic is continuing to grow with an average of 88 cases of HIV infection reported each month during the past year. As of December 31, 2001, there were 18,422 persons cumulatively reported with HIV, and of them, 12,078 have been diagnosed with AIDS.

South Carolina has experienced a 55% increase of all persons living with HIV/AIDS from 1995 to 2001. More dramatic, there has been a 74% increase in the number of women living at the end of 2001 compared with the number living in 1995.

This section summarizes the overall toll of the epidemic in South Carolina based on total reported HIV/AIDS cases and deaths.

Gender

Figure 7 shows the impact of HIV on the men and women in South Carolina. Men unequivocally are disproportionately affected by HIV/AIDS. They make up 49% of South Carolina's total population, but comprise 70% of persons living with HIV (prevalence). HIV-only diagnosed cases during the two-year period 1999-2000 gives an estimate of more recent infections or potentially emerging populations.

Figure 7: Disproportionate HIV Impact by Gender, South Carolina

SEX	No.(%) SC Total Population	No. (%) of Total Estimated Living With HIV/AIDS, 2001	No. (%) of Total HIV-Only Diagnosis, 1999-2000
Male	1,948,929 (49%)	8,366 (70%)	685 (62%)
Female	2,063,083 (51%)	3,561 (30%)	428 (38%)
Total	4,012,012	11,930 (100%)	1,113 (100%)

Source: 2000 US Census Data; SCDHEC HARS

These data show an increasing proportion among females (38%) compared to the prevalence data (30%).

Note: The estimated number of persons living with HIV/AIDS as of 2001 includes 1,310 persons reported to other states upon initial diagnosis but who have subsequently moved to South Carolina and received care. Persons who had only an HIV

infection diagnoses (not yet AIDS) during 1999 – 2000 includes only persons initially diagnosed and residing in South Carolina and excludes any out-of-state cases who may have moved to the state.

Figure 8 : HIV/AIDS Case Rate per 100,000 for Males and Females, 1988 - 2001

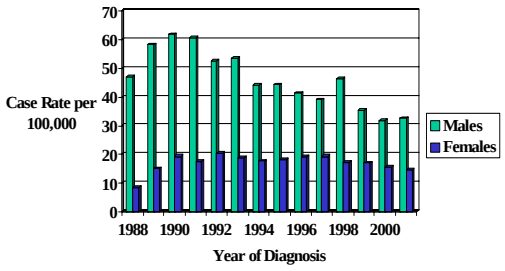
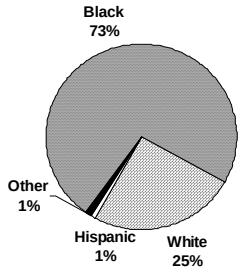


Figure 8 shows the rate per 100,000 population for males and females diagnosed with HIV/AIDS each year. During 1996 – 2001 the case rate for females appears to be slightly decreasing. For males, the rate had declined prior to 1998, when the rate increased due to screening in the state correctional facilities. With the exception of 1998, the ratio of men to women has averaged about 2 to 1 during the past three years, where previously it was more than 3 to 1.

Race/Ethnicity

African Americans are disproportionately impacted by HIV/AIDS in South Carolina. They comprise 30% of the state's total population, yet 73% of the total persons living with HIV are African American. One percent (1%) of total cases are Hispanic, who comprise 2% of the state's population. (Figure 9).

Figure 9: Proportion of Persons Living with HIV/AIDS by Race/Ethnicity, 2001



African American men comprise 15% of the state's population, yet 48% of the total prevalent HIV/AIDS cases in 2001. African American women, similarly, comprise 17% of the population, yet 25% of prevalent cases. More recent infections (HIV-Only Diagnosis) during 1999 - 2000 reflect a slight decrease among white men and increase among African American women relative to the proportion of persons living with HIV in 2001. (Figure 10)

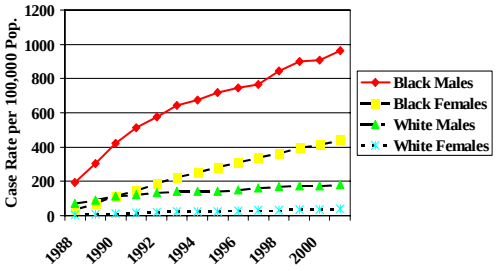
Figure 10: Disproportionate HIV Impact by Race/Ethnicity/Gender, SC

Gender & Race/Ethnicity	No. (%) SC Total Pop.	No. (%) of Total Persons Living With HIV/AIDS, 2001	No.(%) of Total HIV Only Diagnosis, 1999-2000
Black Males	593,707 (15%)	5726 (48%)	538 (48%)
Black Females	668,799 (17%)	2966 (25%)	360 (32%)
White Males	1,355,222 (34%)	2465 (21%)	130 (12%)
White Females	1,394,284 (35%)	544 (5%)	63 (6%)
Hispanic Males	23,978 (0.6%)	143 (1%)	13 (1.2%)
Hisp. Females	22,296 (0.6%)	35 (0.3%)	5 (0.4%)

Each year the number of all persons living with HIV/AIDS continues to grow. Case rates per 100,000 by race and gender show the disparate

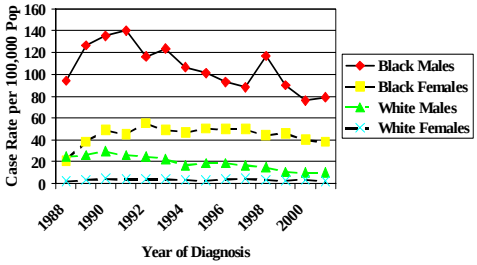
burden of HIV among African Americans. As Figure 11 shows, the rate per 100,000 population in 2001 is five times higher for black males than for white males, and eleven times higher for black females compared to white females. An increase in the case rate for black men in 1998 reflected a large number of new cases reported as a result of a Department of Corrections screening.

Figure 11: HIV/AIDS Prevalence Rates by Race/Gender, SC



While the overall number and rate of newly diagnosed persons with HIV/AIDS each year is stable, there are differences among race/gender populations. (Figure 12) The case rate per 100,000 population among white men in South Carolina has decreased 37% during the past five years (1997-2001). The increasing rate among African American women in both S.C. and the U.S. during 1988 - 1992 indicate the increasing risk of heterosexual transmission. The rate for African American women in S.C. decreased 23% from 1997 to 2001.

Figure 12: HIV/AIDS Case Rates by Race/Gender and Year of Diagnosis, SC



As stated previously, the case rate among African American males increased in 1998-1999 due to correctional facility screening; however, overall the rate decreased 11% during the past five years.

Age

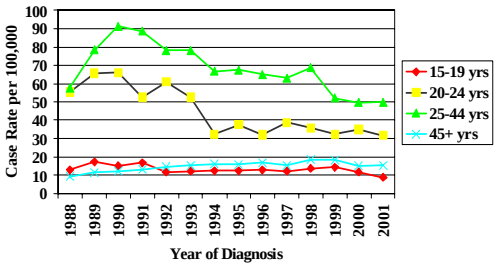
When looking at age groups, persons between the ages of 20 and 44 are disproportionately impacted. They make up 37% of the total population yet they represent about 81% of prevalent and 75% of HIV-only diagnosed cases. (Figure 13)

Figure 13: Disproportionate HIV Impact by Age, SC

Age	No. (%) SC Population	No. (%) of Total Persons Living with HIV/AIDS, 2001	No. (%) of Total HIV-Only Diagnosis, 1999-2000
< 13 Years	724,209 (18%)	144 (1%)	7 (1%)
13 – 19 Years	411,579 (10%)	499 (4%)	64 (6%)
20 – 44 Years	1,467,669 (37%)	9720 (81%)	838 (75%)
45+ Years	1,408,565 (35%)	1559 (13%)	202 (18%)

Figure 14 shows the HIV/AIDS case rates per 100,000 population by year of diagnosis for selected adult/adolescent age groups for the past fourteen years. The rates are highest for persons 25 - 44 years of age, followed by those 20 –24 years.

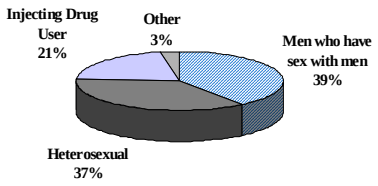
Figure 14: S.C. HIV/AIDS Case Rate per 100,000 by Age by Year of Diagnosis, 1988-2001



Risk Exposure

Men who have sex with men (MSM) comprise the greatest proportion of persons living with HIV/AIDS at the end of 2001 with known risk factors (39%), followed by heterosexuals (37%). Twenty-one percent (21%) are injecting drug users. (Figure 15).

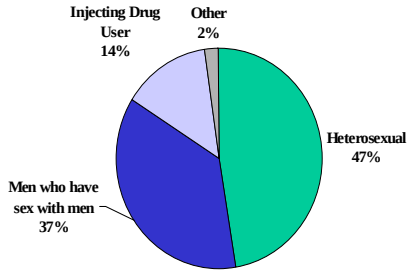
Figure 15: Proportion of Persons Living with HIV/AIDS by Risk Exposure, 2001
N=8,536



Note: Total Excludes Cases with No Risk Identified

Other risks include blood transfusions, hemophilia, and perinatal transmission. Of the total estimated number of persons living with HIV/AIDS in 2001, 26% had no risk identified (not reflected in Figure 15).

Figure 16: Proportion of HIV/AIDS Cases by Risk Exposure, 2000-2001
N= 1,194



Note: Total Excludes Cases with No Risk Identified

Figure 16 shows a slight shift in risk exposure categories among persons diagnosed with HIV/AIDS during 2000 – 2001 with known risk exposures compared to the prevalent cases in Figure 15. The proportion of cases due to heterosexual transmission was 47%, men who have sex with men accounted for 37%. Thirty-three percent (33%) of these cases had no risk identified (not reflected).

Note: The primary reasons for risk exposure information not reported were explained in the Introduction, South Carolina HIV/AIDS Surveillance System section. Over time, the proportion of cases with no risk identified in a given year decreases when risks are determined through follow-up surveillance activities. For example, during 2000 there were 312 cases originally reported with no risk; as of December 2001, risks were determined for 249 of the 312 cases.

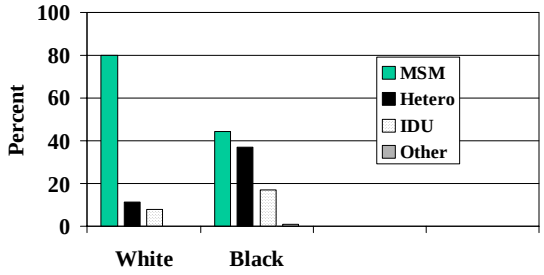
The race/gender profile of 2001 cases originally reported with no risks is similar to the total proportion of HIV/AIDS cases by race/gender. (Figure17)

Figure 17: Comparison of No Risk Identified Cases with Total S.C. HIV/AIDS Reported Cases, 2001

Race/Gender (Adult/Adolescent Cases)	% Total Cases with No Risk Identified, 2001 N=350	% Total HIV/AIDS Cases Reported, 2001 N=927
Black Male	50%	50%
Black Female	32%	27%
White Male	11%	15%
White Female	4%	4%
Other	4%	3%

During 2000 – 2001, 73% of males diagnosed with HIV/AIDS were African American. Among African American males with reported risk factors, most cases were attributed to male to male sexual contact (44%) and heterosexual contact (37%). Injecting drug use was reported more frequently among African American men (17%) than white men (8%).

Figure 18: Proportion of White and Black Male HIV/AIDS Cases By Exposure Category, Diagnosed 2000-2001

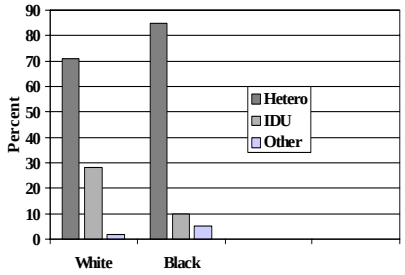


Total Males, All Ages; Excludes Persons with No Risk Reported; N=783

Among white men, over three-fourths (80%) were men who have sex with men. Only 11% reported heterosexual risk. (Figure 18)

Among women diagnosed during 2000 – 2001, 85% of cases were among African American women. Heterosexual contact was the most common reported risk for all women (84%). Injecting drug use is more commonly reported among white women (28%) than among black women (10%). (Figure 19)

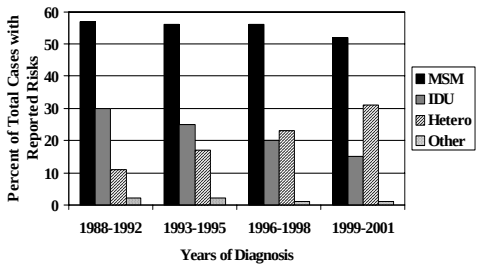
Figure 19: Proportion of White and Black Female HIV/AIDS Cases By Exposure Category, Diagnosed 2000-2001



Total Females, All Ages; Excludes Persons with No Risk Reported; N=376

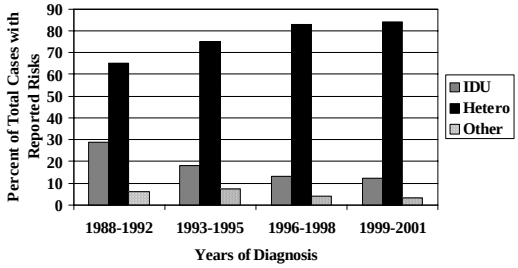
Figures 20 and 21 show the proportion of total HIV/AIDS cases diagnosed during four periods from 1988 – 2001 by sex and risk exposure category for males and females in South Carolina. Both men and women experienced decreases over time in the proportion of total cases with risk reported among injecting drug users.

Figure 20: Proportional Distribution of Male HIV/AIDS Cases, by Exposure Category, Diagnosed 1988-2001



There was a 50% decrease in the proportion among injecting drug use for men and 59% decrease among women during 1988 – 1992 to 1999 – 2001. The proportion of heterosexual risk increased 182% for men and 29% for women during these time periods.

Figure 21: Proportional Distribution of Female HIV/AIDS Cases, by Exposure Category, Diagnosed 1988-2001



Residence

Persons living with HIV/AIDS are widespread throughout the state. Over 41% of counties have prevalence rates >600 per 100,000 for African Americans, as reflected in Figure 22. Annual case rates in counties of more recently diagnosed African American persons during 1999 – 2001 reflect essentially the same counties as highest prevalence rates. Richland county has the highest annual case rate (Figure 23).

Figure 22: SC HIV Prevalence Rates (per 100,000 population)Cases Currently Living, 2001 African-American

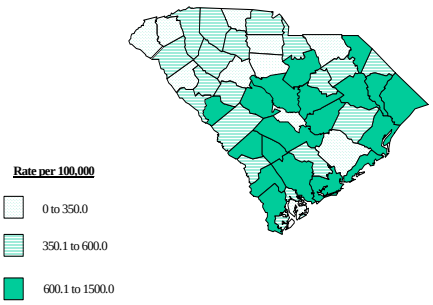
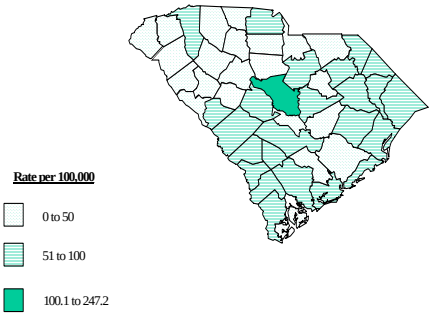


Figure 23: SC HIV/AIDS Incidence Rates (per 100,000 population) 1999-2001 Average of Cases African-American



Counties with highest prevalence rates among white persons include more urban areas of Greenville, Spartanburg, Richland (Columbia), Charleston, Horry (Myrtle Beach), as well as Orangeburg, Florence, Marion, Marlboro, Jasper, Allendale, McCormick, Dillon and Lee (Figure 24). Figure 25 shows counties with highest rates of more recently diagnosed white persons are Richland, Charleston, Horry, McCormick and Marlboro.

Figure 24: SC HIV Prevalence Rates (per 100,000 population)Cases Currently Living, 2001 Whites

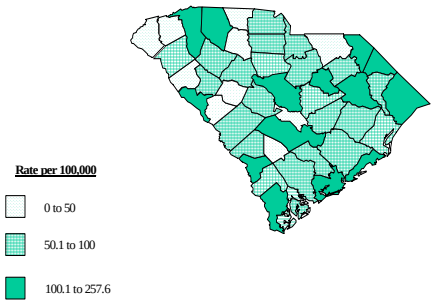
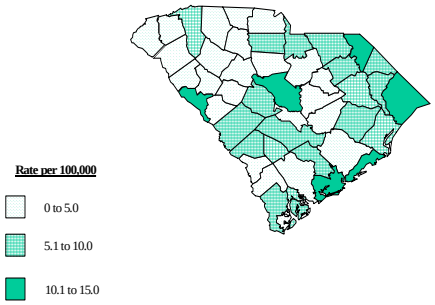


Figure 25: SC HIV/AIDS Incidence Rates (per 100,000 population) 1999-2001 Average of Cases Whites

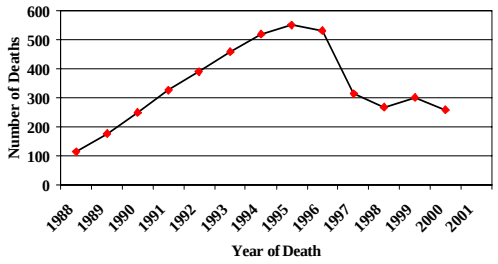


Mortality

With the advent of combination therapies and the use of prophylaxis, persons infected with HIV are living longer, delaying the progression of AIDS, which is the advanced stage of the disease. These medications have also led to the decrease in HIV-related deaths.

Large declines in HIV mortality nationally essentially occurred during 1996 – 1997. Officials at the Centers for Disease Control and Prevention (CDC) cautiously attributed the sudden drops in deaths to new anti-retrovirals, protease inhibitors, combination therapies, and increased prophylaxis for opportunistic illnesses. However, the initially reported gains were tempered by reports of demographic differentials that suggested only certain groups were benefiting from these new therapies

Figure 26: Deaths Among Persons with AIDS in South Carolina, 1988-2000



Source – SCDHEC, Vital Records, SC Residence Data

Figure 26 shows largest declines in deaths in South Carolina were in 1997, dropping to 317 from 532 the previous year. Data for 1999 HIV/AIDS-related mortality in South Carolina show a slight increase from the previous year from 268 to 302. However in 2000, the annual number of HIV/AIDS-related deaths fell to 260, the lowest number of HIV/AIDS-related deaths recorded in the state since 1990, when the death toll was 249.

Comparisons of declining deaths between 1995 (when mortality levels peaked) with 1996, 1997, and 1998 demonstrate a more uniform mortality experience for the state as a whole and between various demographic groups (Figure 27). Whereas females experienced a 7% increase in mortality between 1995-1996, this turned around to a 41% decline between 1995-1998 and a 32% decline between 1995-2000.

However, the mortality decline among men from 1995 to 2000 was 59%.

Among racial groups, while whites experienced a decline 35% in HIV/AIDS mortality between 1995 and 1996, Blacks experienced an 11% increase. The comparative 1995-1998 and 1995-2000 periods showed declines of 44% and 46% among Blacks, respectively. However, the mortality decline among whites during those years (66% and 67%, respectively) was nearly one-third greater that of blacks that same period.

Figure 27: Percent Change in Numbers of HIV-Related Deaths by Gender and Race, 1995 - 2000

Gender Race	% Change 1995 - 1996	% Change 1995 – 1998	% Change 1995 - 2000
Females	+7	-41	-32
Males	-6	-54	-59
Black	+11	-44	-46
White	-35	-66	-67
Total	-4	-51	-53

Source – SCDHEC, Vital Records, SC Residence Data

Figure 28 shows the rank of HIV infection among all causes of death in South Carolina for young adults. In 2000, HIV was the fifth leading cause of death among South Carolinians between the ages of 25 and 44. However, among Blacks it ranked fourth and for whites, seventh of the same age group. For white women between the ages of 25 and 44, HIV did not rank among the top 10 leading causes of death in 2000, it ranked eleventh. Conversely, for Black women of the same age group, HIV was the fourth leading cause of death and contributed to 11% of all their deaths within the same year. Concurrently, of all deaths among Black men between the ages of 25 and 44, 12% were due to HIV, 4 times more than white men.

Figure 28: Rank of HIV Among All Causes of Death for Persons Aged 25-44, by Sex and Race, SC, 2000

Race	Men	Women	Total
Black	3	4	4
White	7	11	7
Total HIV Rank – All Causes of Death	5	4	5

Source – SCDHEC, Vital Records, SC Residence Data

Question #3: Who is at risk for becoming infected with HIV?

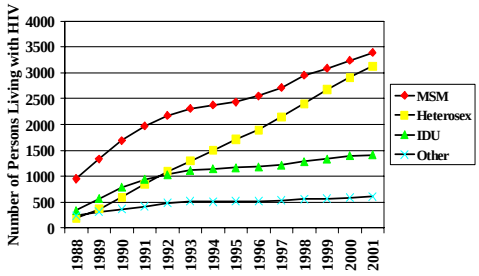
The persons most likely to become infected with HIV are those who engage in high-risk behaviors with persons in communities with a high number/rate of persons living with HIV infection, i.e. prevalence. As mentioned previously, growing numbers of people with HIV in South Carolina are living more healthy lives, including sexual activity. The frequency of high-risk behavior combined with the HIV prevalence in sexual or drug using-networks determines a person's risk for becoming infected. In order to accurately target STD/HIV prevention and treatment activities, it is important for community planning groups (and program providers) to have information on the number and characteristics of persons who become newly infected with HIV and persons whose behaviors or other

exposures put them at various levels of risk for STD and HIV infection. This section summarizes HIV infection among population groups at high risk for HIV infection, sexually transmitted disease data, and behavioral data.

Characteristics of HIV/AIDS in Persons at Highest Risk

Analysis of characteristics of persons with HIV/AIDS helps identify persons at greatest risk for becoming infected. Risk for infection can be determined by assessing the frequency of high-risk behavior (e.g., unprotected sex, needle-sharing) in combination with the estimated prevalence of HIV/AIDS and incidence of HIV/AIDS.

Figure 29: Number of Persons Presumed Living with HIV/AIDS at End of Year by Risk, 1988-2001

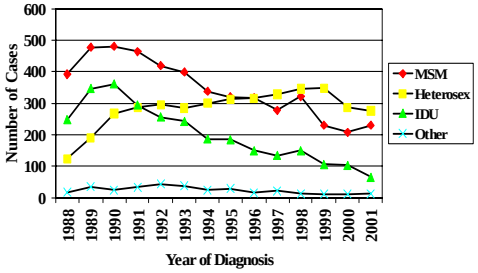


Number Excludes Persons with No Risk Reported; MSM/IDU included in IDU category

Figure 29 shows the number of persons in South Carolina living with HIV/AIDS at the end of each year by reported risk. Men who have sex men (MSM) comprise the greatest number of living persons, followed by heterosexuals. Injecting drug users (IDU) and other risks (e.g. hemophilia, blood transfusion, perinatally acquired infection) comprise fewer numbers.

While men who have sex with men comprise the greater proportion of persons living with HIV, newly diagnosed HIV/AIDS cases each year indicate that beginning in 1997, more persons report heterosexual risk than male to male sex. While not validated, many local experts believe that the number of heterosexuals among African American men may be artificially high due to fears of discrimination; therefore, men do not reveal male to male sex as a risk behavior. The number of injecting drug users reported each year has been steadily decreasing. (Figure 30).

Figure 30: Number of HIV/AIDS Cases by Year of Diagnosis and Risk, 1988 -2001



Excludes Persons with No Risk Reported

Based on data in this profile, the following primary populations have been identified as being the highest risk of HIV/AIDS: men who have sex with men (MSM), high-risk heterosexuals, and injecting drug users (IDUs). Women will be described in the heterosexual and injecting drug user section, and teenagers/young adults will be described within each population category. Since African Americans are disproportionately impacted across each risk category, this impact will be described for each risk population rather than as a separate population. Infants and children and prison populations will be described separately.

Men Who Have Sex With Men

Estimates of Men Who Have Sex with Men Behavior in South Carolina

According to the U.S. Census Bureau, there are approximately 1,274,000 males in South Carolina between the ages of 15-64, which is the age range when persons are most sexually active (912,000 are white; 362,000 are African American). Review of literature and other state profiles, indicates that the estimated percentage of men who have sex with men (MSM) ranges from 2.1% to 10.1%, with the average at 2.7%. This would mean that the number of MSM in South Carolina could be estimated to be 34,398, although the estimated range is much broader.

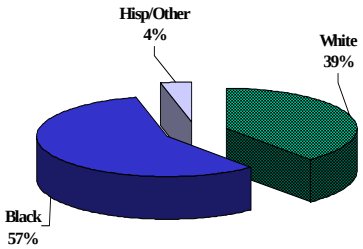
Characteristics

Note: for purposes of this analysis, cases that are both men who have sex with men (MSM) and injecting drug users (IDU) are included in the injecting drug user category.

The largest proportion of persons living with HIV/AIDS in South Carolina at the end of 2001 were men who have sex with men (40% of total prevalent adult/adolescent cases). MSM's account for a slightly smaller proportion (39%) of the more recently diagnosed adult/adolescent cases during 2000-2001. The number of MSM cases diagnosed each year decreased 17% from 1997 to 2001.

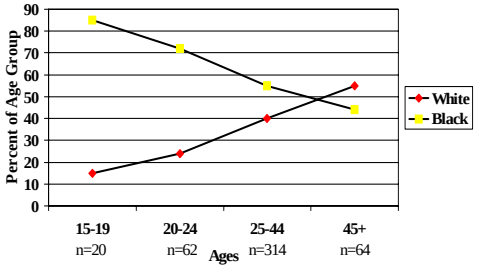
As Figure 31 demonstrates, the majority of MSM cases diagnosed during 2000 - 2001 were African Americans (57%). White men accounted for 39% of the new cases and 4% were Hispanic or other races.

Figure 31: Proportion of Men with HIV/AIDS Who Have Sex With Men by Race/Ethnicity, Diagnosed 2000-2001 N=460



The majority of men who have sex with men diagnosed during 2000 – 2001 were 25 – 44 years of age (68%); 13% were 20 – 24 years old. For men more recently diagnosed, African Americans accounted for the highest proportion for each age group except for those 45 and older (Figure 32).

Figure 32 : Percent MSM HIV/AIDS Cases Diagnosed 2000-2001 by Age Group & Race N=460

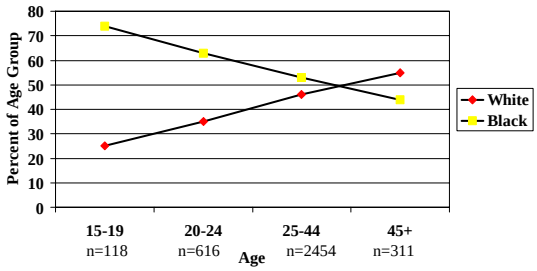


Total N includes 18 Other Men Not Included in Graph Due to Small Numbers

Of the men who have sex with men presumed living with HIV in 2001, 54% were African American, 44% were white and 2% were Hispanic/other men. As Figure 33 shows, for each younger age category

under 45 years, African Americans comprise the greatest proportion of living MSM's. However, among those 45 years and older, the largest proportion are white men (55%).

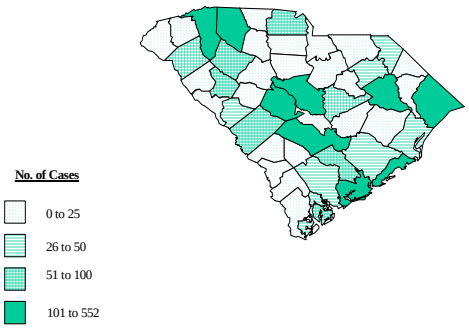
Figure 33: Percent of MSM Living with HIV/AIDS by Age Group & Race, 2001
N=3,503



Total N includes 54 Other Men Not Included in Graph Due to Small Numbers

The more urban counties of Greenville/Spartanburg, Richland, Lexington, Charleston, Horry, Florence and Orangeburg have the greatest number of men who have sex with men living with HIV/AIDS in 2001 (Figure 34).

Figure 34: SC HIV Prevalence by Exposure Category, 2001 Reported Cases, by County MSM



Due to small numbers for many counties, portraying the three year annual case numbers of men who have sex with men by county is not useful.

Conclusions

These data indicate that prevention efforts targeted to men who have sex with men need to be tailored to both African American and white men. African American men account for over half the proportion of both living cases (54%) and newly diagnosed HIV/AIDS cases (57%). Increased efforts in particular are needed to reach younger African American MSM <25 years of age; for white men, targeted efforts are needed for those >25 years. Interventions also need to be particularly available for persons living in the more urban areas of the state.

High Risk Heterosexuals

Estimates of high-risk heterosexual behavior in South Carolina

It is difficult to make an assessment of the number of persons in South Carolina who engage in heterosexual contact that puts them at high risk for becoming infected with HIV. While there are some differences in the population of persons with HIV/AIDS than for those with a sexually transmitted disease, most experts acknowledge that a diagnosis of an STD would suggest that the individual is engaging in unsafe sexual practices. During 2001, 9,562 cases of chlamydia, 7,834 cases of gonorrhea and 235 cases of infectious syphilis were reported in South Carolina. Women with an STD, in particular, indicate high risk heterosexual activity. Among the 2001 cases of chlamydia, 8,546 were among women, and 3,473 women were reported with gonorrhea. More data on STDs, as well as other behavioral indicators such as teenage

pregnancy and condom use is described later.

In order for a case of HIV or AIDS to be considered as heterosexual transmission, it must be documented that the individual had heterosexual contact with a person who has documented HIV infection or AIDS, or had heterosexual contact with a person who is in a high risk group for HIV (MSM or injecting drug user).

Characteristics of High Risk Heterosexuals

Persons with documented high-risk heterosexual contact comprise 36% of the total adult/adolescent persons living with HIV/AIDS at the end of 2001 and 47% of persons more recently diagnosed during 2000-2001 (excluding persons with no risk identified for both new and prevalent cases). The number of heterosexual cases diagnosed each year decreased 16% from 1997 to 2001 (Figure 30).

Figure 35 shows that over half (56%) of recently diagnosed heterosexual HIV/AIDS cases are women. African American women account for 48% of recent cases and white women account for 8%. Thirty-seven percent (37%) are African American men. White men account for only 4% of recent cases.

Figure 35: Proportion of Heterosexual HIV/AIDS Cases by Race/Sex, Diagnosed 2000-2001 N=595

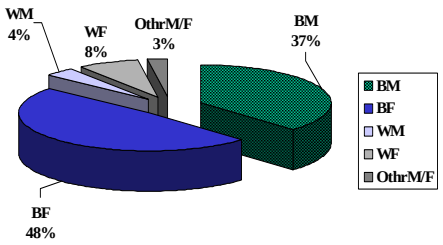
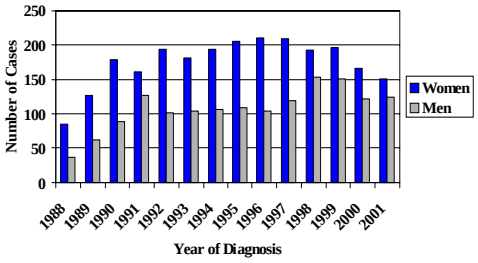


Figure 36 shows the increasing number of heterosexually-acquired HIV in women in South Carolina from 1988 to 2001. The proportion of female to male cases during most of this period averaged 2 to 1. The number of women has decreased slightly during the last two years. The number of men reporting heterosexual HIV risk has gradually decreased by 18% from 1998 to 2001.

Figure 36: Number of HIV/AIDS Cases Attributed to Heterosexual Transmission, By Sex and Year of Diagnosis



The majority of high risk heterosexuals recently diagnosed were 25 – 44 years of age (64%); 21% were 45 years and older, and 15% under 25 years. With the exception of the 15-19 year old group, African American women and men comprised the greatest proportion of cases in each age group (Figure 37). African

American women account for over half the total cases among young women under 45 years. White women and men account for an average of 11% or less of young and older ages.

Figure 37: Percent Heterosexual HIV/AIDS Cases Diagnosed 2000-2001 By Age Group and Race/Sex N=595

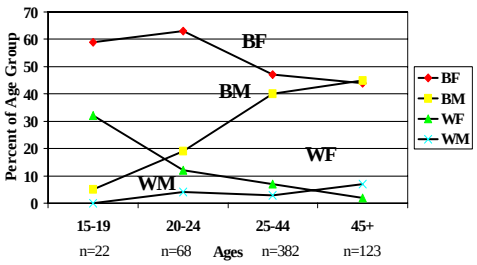
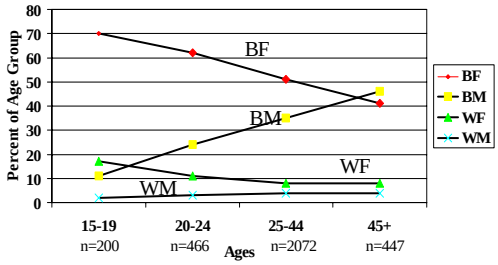


Figure 38: Percent of Heterosexuals Living with HIV/AIDS by Age Group and Race/Sex, 2001 N=3,192

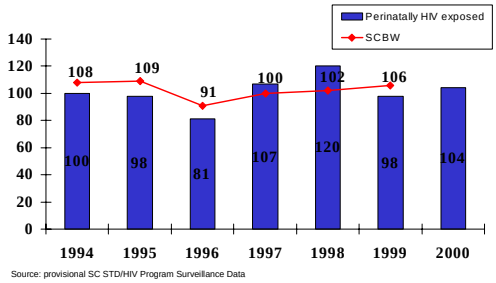


Of the high risk heterosexual persons presumed living with HIV/AIDS in 2001, over half were African American women (53%), 33% were African American men; 9% were white women. As Figure 38 shows, over three-fourths of young women under 25 living with HIV/AIDS were African American; over one half of persons 25 – 44 are African American women. However, the proportion of persons living 45 years and older is greatest for African American men. As with more recently diagnosed persons, white women and men account for an average of 13% of persons living with HIV across all age groups.

Estimates of prevalence of HIV among High Risk Heterosexual Women

Estimates of HIV prevalence among women were obtained during 1990 – 1997 through a population-based seroprevalence survey of women who deliver live births at hospitals throughout the state. Recently estimates are obtained by the pediatric surveillance system using reports of HIV infected women delivering live births. While this prevalence is limited to child-age bearing women who have delivered a child, it provides the best overall estimate available for HIV infection among women 15 –44 years of age.

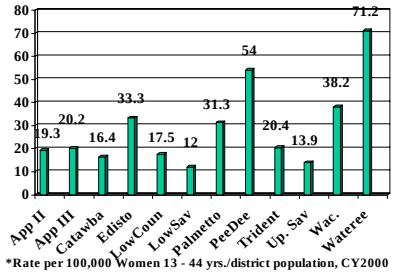
Figure 39: Estimated HIV Prevalence Among Child-Age Women - Perinatally HIV Exposed Births by Year of Birth Compared to SC Survey of Child Bearing Women



Source: provisional SC STD/HIV Program Surveillance Data

Figure 39 shows that the number of HIV infection cases among all women delivering live births has been stable during the past seven years, averaging about 100 per year. The rate, though, is nearly 15 times higher among African American women compared to white women.

Figure 39a: Infants Born to HIV+ Mothers, Case Rate* by District, Births January 1, 1999 – November 30, 2001



*Rate per 100,000 Women 13 - 44 yrs./district population, CY2000

Figure 39a shows the rate of HIV infection among women delivering live births per total population of women of child bearing age by district. Wateree has the highest rate (71.2), followed by Pee Dee (54.0). These areas are also reflected in the graphs below showing counties with the highest rates of persons living with HIV/AIDS.

Figure 40 shows the counties with highest prevalence of persons living with HIV/AIDS due to heterosexual transmission. These are the more urban counties of Greenville/Spartanburg, Richland, Sumter, Florence, Orangeburg, Horry and Charleston.

Figure 40: SC HIV Prevalence by Exposure Category, 2001 Reported Cases, by County Heterosexual Contact

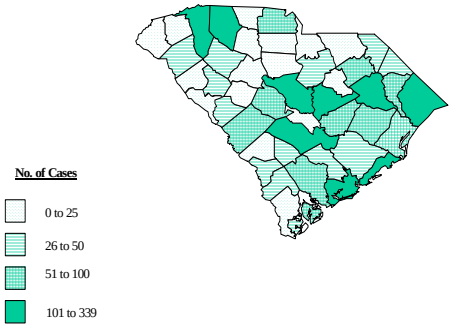


Figure 41: SC HIV Incidence Rates (per 100,000 population) 1999-2001 Average of Cases Females

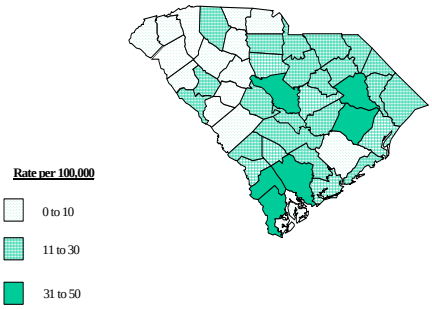


Figure 41 shows the case rate for 1999-2001 among women, an indicator for more recent heterosexual risk. Richland, Florence, Williamsburg, as well as rural Jasper, Colleton, and Hampton counties had the highest case in the state.

Conclusions

These data indicate that prevention efforts targeted to high risk heterosexuals need to be tailored to African American, particularly young women under age 25, who account for about two-thirds of both living cases and more recently diagnosed persons in this age group. Efforts also need to target African American women 25 – 44 years, who account for half of living and more recently diagnosed cases (all ages). Prevention efforts targeting African American men should be tailored to reach those primarily 45 years and older and 25 – 44 years.

Injecting Drug Users

Estimates of Injecting Drug Use Behavior in South Carolina

According to 1999-2000 estimates of heroine use provided by the SC Department of Alcohol and Other Drug Abuse Services (DAODAS), there are 8,000 persons in South Carolina who are injecting drug users in need of treatment services.

Characteristics of Injecting Drug Users

Note: persons who are categorized as both men who have sex with men and injecting drug users are included in this population description.

Injecting drug users (IDU's) account for 16% of the persons presumed living with HIV/AIDS in 2001 and 11% of persons more recently diagnosed with HIV/AIDS during 2000-2001. The number of IDU cases diagnosed each year decreased 52% from 1997 to 2001 (See Figure 30).

Figure 42: Proportion of Injecting Drug Users Diagnosed with HIV/AIDS 2000-2001 by Race/Sex N=184

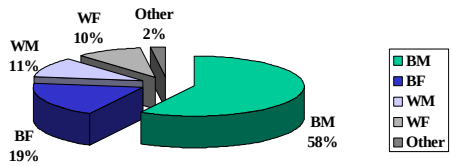


Figure 42 shows that over half (58%) of recently diagnosed injecting drug use cases are African American men; African American women account for 19% of cases. White men account for 11% of recent diagnoses and the least proportion is white women (10%).

Men overwhelmingly are impacted by HIV transmitted by injecting drug use, averaging 3 cases to every one case reported among women each year. Men show a decrease in number of diagnosed IDU cases since 1998. For this same period, the number of diagnosed IDU cases women was fairly stable. The increase in 1998 cases for men is likely due to targeted screening in corrections facilities, identifying more new cases that year. (Figure 43)

Figure 43: Number of HIV/AIDS Cases Due to Injecting Drug Use by Sex and Year of Diagnosis, 1988-2001

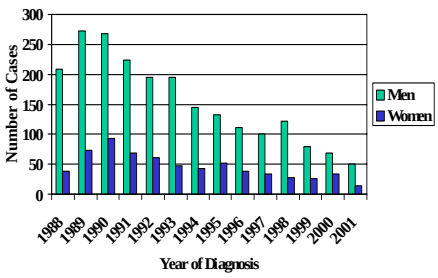
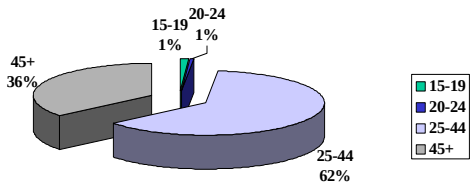


Figure 44 shows that 62% of recently diagnosed IDU cases are 25 – 44 years of age; 36% are 45 years and older. Only 2% of persons diagnosed during 2000-2001 were under 25 years.

Figure 44: Percent of Injecting Drug Users Diagnosed with HIV/AIDS 2000-2001 by Age Group N=184



Similarly, persons living with HIV/AIDS due to injecting drug use are largely 25 years of age and older (93%). African Americans account for the greatest proportion of cases in each age group, with African American men accounting for over 58% of those older than 25 years. (Figure 45)

Figure 45: Percent of IDU Persons Presumed Living with HIV/AIDS by Race/Sex and Age Group, 2001 N=1953

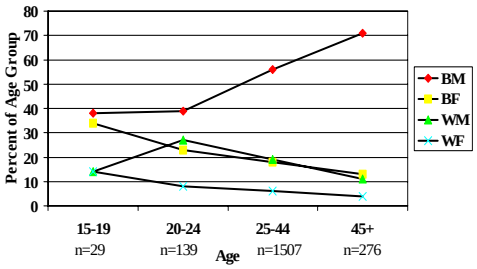
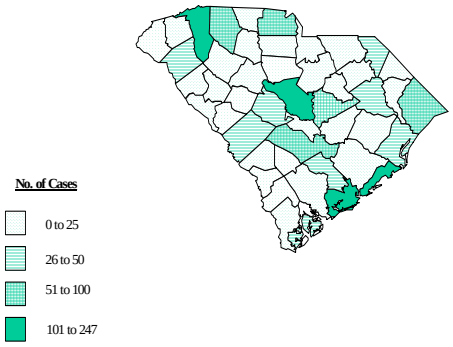


Figure 46 indicates the counties with the highest number of persons living with HIV with injecting drug use risk (Greenville, Richland, and Charleston). As with other risks, the more urban counties have the greatest numbers.

Figure 46: HIV Prevalence by Exposure Category, 2001 Reported Cases, by County IDU



Conclusions

Prevention efforts targeting injecting drug users need to be tailored to men, primarily African American men who comprise over half of recently diagnosed cases, followed by African American women and white men. Efforts should target persons older than 25 years and those who are predominately in more urban counties including Horry, Orangeburg and Sumter.

Other Populations

Other populations at varying risk for HIV are described below and include infants and children, incarcerated persons, persons with sexually transmitted diseases, and pregnant teen-age women.

Infants and Children

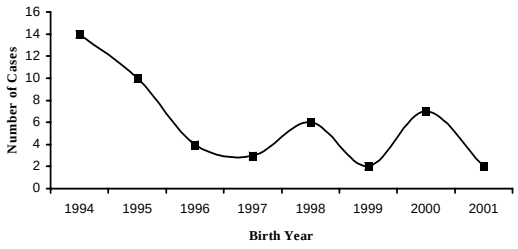
(Children under 13 years of age)

The majority of infants and children are infected with HIV through exposure to their mother during pregnancy. Through December 2001, there were 192 HIV infection cases diagnosed among children under 13 years of age, of which 117 had AIDS.

This represents 1.0 percent of the total reported AIDS and HIV infection cases. The majority of the children with HIV are black.

There has been significant progress during the past five years in reducing the number of infants with perinatal acquired HIV infection. Figure 47 shows the decline in the number of infants diagnosed from 14 cases in 1994 to 2 cases in 2001.

Figure 47: Number of Perinatally Acquired HIV/AIDS Cases by Birth Cohort Year, 1994-2001



Source: provisional SC DHEC HIV/AIDS Program Surveillance Data

Incarcerated Persons

Incarcerated persons are another special population of concern; the Centers for Disease Control estimates that 17% of all U.S. HIV infected people have passed through a correctional facility before. Recent interviews with HIV infected persons in South Carolina indicated that more than one-fourth (27.5%) reported having been incarcerated. This places a very large percentage of our population at risk. HIV infected inmates who are released from prisons need continued preventive and care efforts for themselves and partners when released into the community.

The SC Department of Corrections estimates there are over 600 persons annually with HIV/AIDS in state facilities. An average of about 100 persons or more are released each year.

During the four-year period 1998-2001, there were 494 persons diagnosed with HIV/AIDS by state prison facilities. Note: due to mandatory screening in the prison initiated in 1998, there were an increased number of cases diagnosed that year (249); during 1999 – 2001, the average number of cases diagnosed is much less, about 82 per year. African American men accounted for 80% of the 494 cases; white men were 9% of the total, African American women were 8%, and white female were 2%.

Of the 277 persons who reported risks, one-third (34%) reported injecting drug use (and injecting drug use/male to male sex); 34% reported heterosexual risk, and 31% reported male to male sex.

Persons with Sexually Transmitted Diseases

STDs are primary risk factors for HIV infection and a marker of high risk, unprotected sexual behavior. Many STDs cause lesions or other skin conditions which facilitate HIV infection. Trends in STD infection among different populations (e.g. adolescents, women, men who have sex with men) may reflect changing patterns in HIV infection that have not yet become evident in the HIV/AIDS caseload of a particular area.

Chlamydia

In 2001, there were 14,425 cases of chlamydia diagnosed in South Carolina. Figure 48 shows the increase of chlamydia as a result of initiating routine screening for all young women attending family planning and STD clinics in health departments statewide. Among those cases with reported race/gender, over two-thirds were African American women (70%); 17% were white women in 2001. Hispanic men and women accounted for 3% of cases in 2001.

Figure 48: South Carolina Reported Chlamydia Cases by Year of Diagnosis, 1992 - 2001

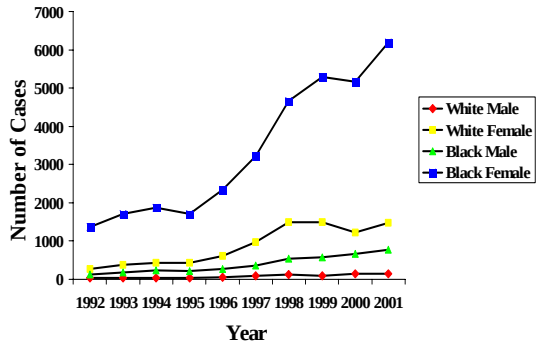


Figure 49: Proportion of 2001 Reported Chlamydia Cases by Year of Diagnosis by Age Group

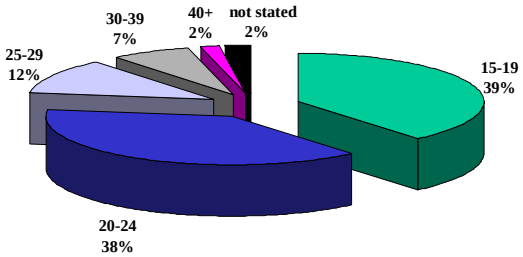


Figure 49 shows that in 2001 young adults 15-19 and 20-24 have the highest proportion of chlamydia (39% and 38%, respectively), followed by those 25-29 years of age. Counties with highest chlamydia rates per 100,000 population in 2001 were Allendale (1,293.4); Williamsburg (875.9); and Bamberg (708.4).

In 2001, 9,598 gonorrhea cases were diagnosed. African American men and women account for 88% of reported cases with known race/gender in 2001. Figure 50 shows trends among race/gender by year.

Figure 50: South Carolina Reported Gonorrhea Cases by Year of Diagnosis, 1992 - 2001

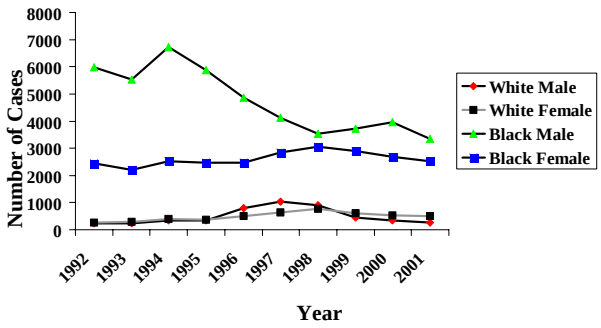
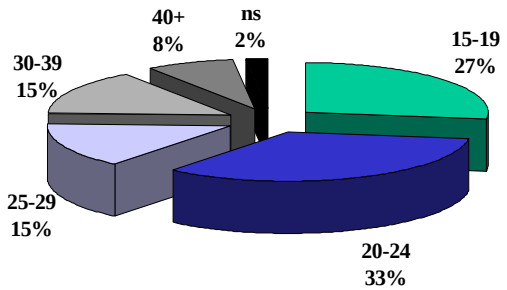


Figure 51 : Proportion of 2001 Reported Gonorrhea Cases by Year of Diagnosis by Age Group



As with chlamydia, gonorrhea cases most affect young adults 15-24 years of age (60% of total) (Figure 51). Counties with highest rates per 100,000 of gonorrhea in 2001 were

Allendale (874.1); Williamsburg (779.6); and Bamberg (534.3).

In 2001, 222 cases of infectious syphilis were diagnosed. As Figure 52 shows, significant decreases have occurred during the past ten years for all infectious syphilis cases. As with other STDs, African Americans are most impacted, accounting for 86% of total cases.

Figure 52: South Carolina Reported Infectious Syphilis Cases by Year of Diagnosis, 1992-2001

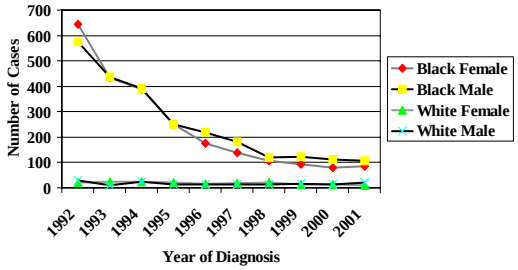
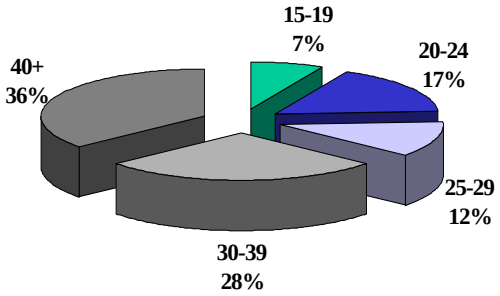


Figure 53: Proportion of 2001 Reported Infectious Syphilis Cases by Year of Diagnosis by Age Group



Unlike other STDs, syphilis most impacts older adults, 30 years and older (64% of total) (Figure 53). Counties with highest infectious syphilis rates per 100,000 were Sumter (37.3), Chester (32.3), and Hampton (23.4).

Teenage Pregnancy

Pregnancy, birth and abortion rates, like STD rates, are indications of the extent of unprotected sexual activity in a population.

African American girls (including less than 1% "other") between the ages of 10 and 14 have continued to have higher rates of live births than their white counter parts. However, their rates have decreased from 4.2 in 1988 to 3.3 per 100,000, respectively.

Teenage pregnancies among 15-17 year old South Carolinians have decreased from a rate of 43.2 per 1,000 live births in 1990 to 34.9 in 2000; a 19% decline (Figure 54). This success is also seen when viewing teen pregnancy by racial/ethnic subgroups. The rate for White 15-17 year old teens was 29.1 in 1990 and 24.9 in 2000, representing a 14% decline. The rate for Black and others was 86.0 in 1987 and 80.4 in 2000, representing a 7% decline. The rate for Blacks was 61.9 in 1996 and 51.0 in 2000, representing a 18% decline. The rate for Others is the only exception to a consistent declining trend where the rate was 21.2 in 1996 and climbed to 30.4 in 1998 and down again to 29.4 in 2000, representing a 39% increase in the rate over the 1996 to 2000 period. This fluctuation may be due to small numbers and the trend for this subgroup requires further observation.

Figure 54: South Carolina Teenage Live Births Rates, Ages 15 - 17

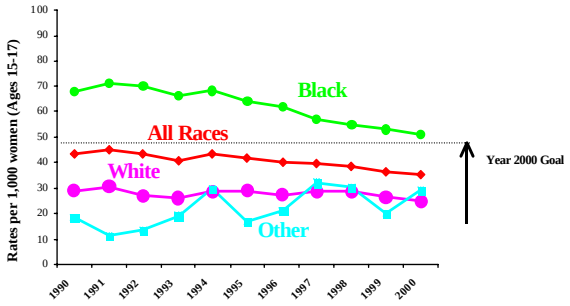
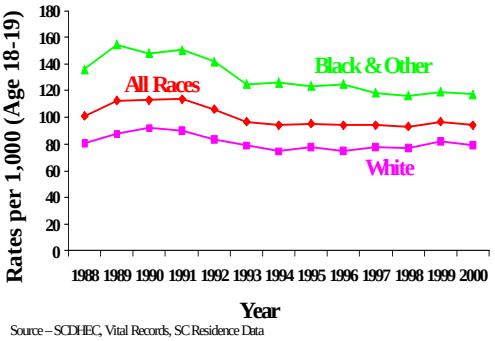


Figure 55: South Carolina Teenage Live Births Rates Ages 18-19



Source – SCDHEC, Vital Records, SC Residence Data

Figure 55 shows the teen pregnancy rates for 18 and 19 year olds. As with the other two age groups, African American and other teenage girls continue to have higher live birth rates over the 10-year period than all races. But also as seen in the other age groups their rates have decreased from 136.2 to 117.2, 1988 and 2000, respectively.

Persons Receiving HIV Counseling and Testing At County Health Departments (C&T Sites)

Data from local HIV counseling and testing sites (county health departments) generally reflect similar trends as HIV/AIDS surveillance data in terms of who is most likely to be HIV infected, risk category, and county of residence. As stated in the Introduction, this data reflects only those persons tested voluntarily in local health departments. HIV infected persons diagnosed through counseling and testing sites account for about one-third of the newly diagnosed persons in South Carolina annually. This data reflects number of individuals tested, not the number of tests. In 2001, African Americans comprised 61% of the total persons tested, but 80% of the total positive. Men accounted for 41% of persons tested but 63% of total positive. Persons 30-39 and 40-49 years of age had the highest positivity rate and comprised 64% of the total positive persons.

Men who have sex with men had the highest positivity rate (11.8%), followed by all heterosexuals at risk (10.8%), and heterosexual injecting drug users (12.9%). Heterosexual partners of persons with HIV had the highest positivity rate (20.3%).

Health districts that accounted for the greatest proportion of persons tested who were positive include those with the same urban counties of highest prevalence: Palmetto District (includes Richland County)- 21% of total

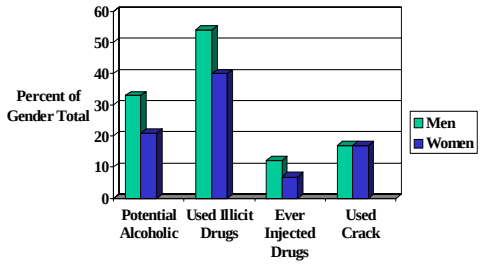
positives tested; Trident (Charleston County)- 14% of total positives; Waccamaw (Horry County) – 13% of total positives; Edisto (Orangeburg County) – 10% of total positive; and Pee Dee (Florence County)- 9% of total positive persons.

Other Behavioral/Risk Data

Supplemental HIV/AIDS Surveillance

DHEC participates in an in-depth survey of persons with HIV/AIDS known as the Supplement to HIV/AIDS Surveillance (SHAS) sponsored by the U.S. Centers for Disease Control. Persons diagnosed with HIV/AIDS living in Richland, Charleston, Orangeburg, Bamberg, Calhoun counties participate in the survey. Eighty-six percent of participants are African American; 11% are white. During September 2000 to December 2001, there were 338 persons interviewed. Regarding sexual activity, 11% reported same sex activity (MSM); 65% reported heterosexual activity; remaining persons reported no sexual activity. About two-thirds (68%) of persons interviewed were asymptomatic HIV (not AIDS), representing more recent infection.

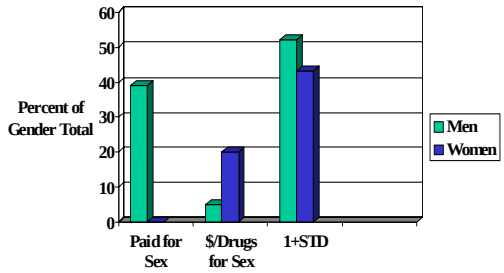
Figure 56: Substance Use Risks by Sex, 9/2000-12/2001 SHAS Participants N=338



Total Men=218 Total Women=120

Substance use during past 5 years or present was reported by one-third of persons with HIV interviewed: 33% reported potential alcoholic, 38% used illicit drugs during past five years. Nine percent reported ever injecting drugs and 18% had used crack. Figure 56 shows the proportion of men and women interviewed who reported substance use risk. More men than women reported each substance use related risk except for use of crack which was equal for both.

Figure 57: Sexual Risk Behaviors, 9/2000-12/2001 SHAS Participants N=338



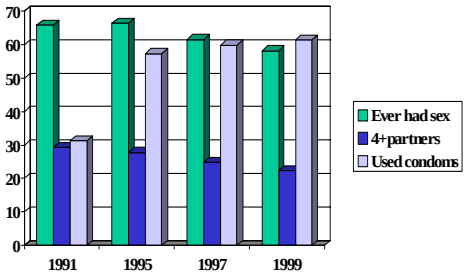
Sexual risks reported by persons interviewed from September 2000 to December 2001 indicate that 39% of men paid some one for sex; 20% of women received either money or

drugs for sex (Figure 57). Fifty-three percent of men and 43% of women reported having at least one sexually transmitted disease (STD) during the past ten years.

Youth Risk Behavior Survey

The Youth Risk Behavior Survey is administered to students in public high school in South Carolina. Figure 58 shows that over time there has been slight decreases in the proportion of students who have been sexually active, had four or more lifetime partners, and increases in those reporting condom use at last sexual intercourse.

Figure 58: Proportion of YRBS Students Indicating Sexual Risks, 1991 - 1999



Substance Use- Department of Alcohol and Other Drug Abuse (DAODAS)

A 1999-2000 household telephone survey of 10,324 adults ≥18 yrs was conducted by the SC Department of Alcohol and Other Drug Use Services (DAODAS) to assess substance use practices. Results indicated that 37% of persons used alcohol during past 30 days, 3% used marijuana, and less than 0.5% used cocaine and hallucinogens during past month. General patterns of substance use by persons in the state indicate that more men than women use drugs/alcohol; higher use levels are generally among younger respondents (18 – 44 years of age).

Job Corps Screening

Job Corps is a national training and employment program for urban and rural disadvantaged youth age 16 - 24 years which is administered by the U.S. Department of Labor. In March 1987, Job Corps began screening all entrants for HIV with their knowledge, and those testing positive were not accepted into the program. Since August 1989, only those applying for residential status (approximately 90% of applicants) have been screened for HIV; HIV positive applicants may remain in the program as nonresidential students. The Job Corps has no exclusion based on sexual orientation, hemophilia or past use of illegal drugs. Current use of illegal drugs, however, is cause for exclusion. As with the military recruits, it is likely that drug-using applicants or applicants who know or suspect that they are HIV positive may terminate their application prior to medical screening, leading to an under-representation of individuals most at risk for HIV.

Among South Carolina entrants through 1997, HIV prevalence is higher for females (0.82%) than for males (0.33%). The rate of infection among blacks (0.55%) is over two times the rate for whites (0.18%). Women from South Carolina applying to the Job Corps from 1990 - 1996 had the fourth highest rate of HIV infection in the country.

Military Recruits
Since October 1985, all persons applying for active duty or reserve military service, the service academies and the reserve Officer training Corps have been screened for HIV infection as part of their medical entrance examination. Because applicants are informed that they will be screened for HIV, individuals who know or suspect they are HIV infected may voluntarily terminate their applications. Accordingly, those at highest risk for HIV infection are likely underrepresented among those medically screened for military service.

South Carolina recruits (through 1997) have shown a slightly higher HIV seroprevalence rate (0.11%) than the rate among those recruited from the entire United States (0.09%). While the rate among whites is similar in South Carolina and the United States, the rate for black applicants is lower in South Carolina than in the United States. Males have shown a higher rate of infection (0.09%) than females (0.05%).

Summary/Recommendations

A review of this epidemiological profile indicates the following primary target populations and recommendations for prevention efforts:

Men Who Have Sex With Men

These data indicate that prevention efforts targeted to men who have sex with men need to be tailored to both African American and white men. African American men account for over half the proportion of both living cases (54%) and newly diagnosed HIV/AIDS cases (57%) who report MSM risk. Increased efforts in particular are needed to reach younger African American MSM <25 years of age; for white men, targeted efforts are needed for those >25 years. Interventions also need to be particularly available for persons living in the more urban areas of the state.

Heterosexuals
These data indicate that prevention efforts targeted to high risk heterosexuals need to be tailored to African American women, particularly young women under age 25, who account for nearly two-thirds of both living heterosexual cases and more recently diagnosed persons in this age group. Efforts also need to target African American women 25 – 44 years, who account for half of living and more recently diagnosed cases. Prevention efforts targeting African American men should be tailored to reach those primarily 45 years and older and 25 – 44 years.

Injecting Drug Users
Prevention efforts targeting injecting drug users need to be tailored to men, primarily African American men who comprise nearly two-thirds of recently diagnosed IDU cases, followed by African American women and white men. Efforts should target persons older than 25 years and those who are predominately in more urban counties including Horry and Sumter.

Due to high proportion of HIV infection among incarcerated persons and high rates of sexually transmitted diseases, efforts to reach these priority populations should include prison facilities and STD clinics and community screening sites.